

IN THE SPECIFICATION:

Before the first line on page 1, insert the following:

-- This is a continuation of application Serial No. 09/852,269 filed 10 May 2001, which is a continuation of Serial No. 09/132,323, filed 11 August 1998, patent number 6,325,908 B1. --

Page 1: The second full paragraph has been replaced with the following amended paragraph:

-- A DNA analysis technology based on electrophoresis, particularly, a DNA sequencer (DNA base sequence analyzer) has been widely available. With the [raised] increased need for analysis, the necessity of improving the analysis throughput has been increased. One method of increasing the analysis throughput is to integrate electrophoresis media. --

Page 2: The two paragraphs starting at line 16 have been replaced with the following amended paragraphs:

-- In the above-described multi-capillary method, [one-ends] first ends of an electrode and a capillary are first inserted in a sample contained in a sample vessel, followed by applying a voltage across the capillary to electrically migrate the sample into the capillary; and then the [one-ends] first ends of the electrode and the capillary are inserted in a buffer solution in a buffer bath, followed by applying a voltage across the capillary to separate the sample by electrophoresis.

In this case, where the number of samples to be simultaneously analyzed is several pieces, since the number of electrodes/capillaries is the same as that of the samples, it does not take [a labor so much] as much labor to insert the electrodes and capillaries in sample vessels and a buffer bath. --

Page 3: The two paragraphs starting at line 12 have been replaced with the following amended paragraphs:

-- An object of the present invention is to provide a multi-capillary type electrophoresis analysis apparatus capable of [making easy works for] simplifying analysis and a sample vessel used therefor.

According to the present invention, there is provided an electrophoresis analysis apparatus having a plurality of migration passages and a detector for optically detecting a plurality of sample components separated by electrophoresis, including: a sample vessel for containing a plurality of samples to be introduced in the migration passages, at least part of a portion, of the sample vessel, to be in contact with these samples being made [from] of a conductive material; wherein the samples are introduced in the migration passages by applying a voltage to the migration passages via the conductive material forming part of the sample vessels. With this configuration, since part of the sample vessel can be used as an electrode and thereby insertion of electrodes in samples can be eliminated, it is possible to [make easy works for] simplify analysis. --

Page 4: The paragraph starting at line 17 has been replaced with the following amended paragraph:

--Fig. 5 is a perspective view of third sample vessels used for the electrophoresis analysis apparatus according to one embodiment of the present invention;--

Page 5: The second paragraph starting at line 5 has been replaced with the following amended paragraph:

--Fig. 11 is a perspective view of an electrode portion of ninth sample vessels used for the electrophoresis analysis apparatus according to one embodiment of the present invention.-

Line 9: After "Detailed Description" delete "of the Preferred Embodiments".

The fifth paragraph has been replaced with the following amended paragraph:

-- Fig. 1 is a perspective view showing the entire configuration of the electrophoresis analysis apparatus according to [the] an embodiment of the present invention. --

The seventh paragraph starting on line 23 and ending on page 6, line 8, has been replaced with the following amended paragraph:

--A migration buffer bath 12 containing a buffer (electrolyte) is disposed on a moving mechanism 10. A platinum electrode 13 is stretchingly mounted in the migration buffer bath 12 in such a manner as to be in contact with the buffer. On the moving mechanism 10 are also disposed three sample trays 100A, 100B and 100C via a sample tray holder 14. As will be described later with reference to Fig. 2, the sample tray 100A includes 48 pieces of sample vessels. The sample tray 100A is removably fixed on the sample tray holder 14 with set screws S1 and S2. The bottom portion of the sample tray 100A is made [from] of a conductive metal such as a stainless steel, and is electrically [conductive] connected to the sample tray holder 14 which is made [from] of a conductive metal such as a stainless steel. Similarly, each of the sample trays 100B and 100C includes 48 pieces of sample vessels and has a bottom portion which is electrically [conductive] connected to the sample tray holder 14. --

Page 6: The second paragraph has been replaced with the following amended paragraph:

-- The moving mechanism 10 is vertically movable in the Z-axis direction along vertical slide guides 18Z using a vertically moving motor 16Z. The moving mechanism 10 is also longitudinally movable in the X-axis direction along longitudinal slide guides 18X using a longitudinally moving motor 16X. The motors 16Z and 16X are controlled by a controller 80. A transparent cover 19 made [from] of polyvinyl chloride or polyacrylate or polymethacrylate resin is disposed in such a manner as to cover the three sample trays 100A, 100B and 100C for suppressing evaporation of samples held in the sample vessels and preventing contamination of the sample vessels with external dust. --

Page 11: The paragraph starting at line 10 has been replaced with the following amended paragraph:

-- The sample plate 102 is fixed on the metal base 104 with eight screws. The metal base 104 is made [from] of a stainless steel as a conductive material. The metal base 104 forms part of wall surfaces of the sample vessels 100-1, 100-2, ..., 100-48, and is used as an electrode common to samples contained in the sample vessels 100-1, 100-2, ..., 100-48. Since the metal base 104 forms part of the sample vessels, it is possible to eliminate the necessity of inserting electrodes in the samples as in the conventional apparatus. It is experimentally confirmed that the metal base 104 made [from even] of [a] stainless steel, which is a widely available material, exhibits a sufficient durability. The electrophoresis analysis apparatus using the metal base 104 made [from] of stainless steel is allowed to be continuously used for a period of six[th] months or more only by periodically washing the sample tray 100. The conventional electrophoresis analysis apparatus is expensive because of use of a noble metal, such as platinum, as an electrode material; however, in the electrophoresis analysis apparatus of the present invention, the use of a stainless steel as an electrode material advantageously reduces the cost of the sample vessels. --

Page 11: The paragraph starting on line 32 and ending on page 12, line 3 has been replaced with the following amended paragraph:

-- Both end portions of the metal base 104 have circular holes 104A, and as described with reference to [shown in] Fig. 1, the sample tray 100 is fixed on the metal [made] sample tray holder with the set screws passing through the circular holes 104A. --

Page 12: The paragraph starting on line 7 has been replaced with the following amended paragraph:

-- In place of the metal base 104, there may be used an insulating substrate on which a metal foil is ~~stuck~~ adhered or a metal film is formed by vapor-deposition or sputtering. At this time, the metal foil or metal film forms part of the wall surfaces of the sample vessels, and it functions as a common electrode when it is made electrically conductive to the samples contained in the sample vessels. --

Page 14: The last paragraph starting at line 25 and ending on page 15, line 7, has been replaced with the following amended paragraph:

-- On the other hand, each metal pin 108 is previously press-fitted in the metal base 104. The number of the metal pins 108 is the same as that of the sample vessels, that is, 48 pieces in this embodiment. The metal pin 108 is made [from] of the same material as that of the metal base 104, that is, a stainless steel. The leading end of the metal pin 108 has a projecting portion 108A having a diameter R3 of ϕ 0.8 mm. In a state in which the sample plate 102 is fixed on the metal base 104, the projecting portion 108A of the metal pin 108 slightly projects into the cylindrical portion 102D of the sample plate 102. With this configuration, the sample is certainly brought in electric-contact with the metal pin 108 and the metal base 104 used as an electrode. --

Page 17: The first paragraph starting at line 2 has been replaced with the following amended paragraph:

-- The sample plate 102' is fixed on the metal base 104 with eight screws. The metal base 104 is made [from] of a stainless steel as a conductive material. The metal base 104 forms part of wall surfaces of the sample vessels 100-1, 100-2, ..., 100-48, and is used as an electrode common to samples contained in the sample vessels 100-1, 100-2, ..., 100-48. Since the metal base forms part of the sample vessels, it is possible to eliminate the necessity of inserting electrode in samples as in the conventional apparatus. --

Page 18: The first full paragraph starting at line 1 has been replaced with the following amended paragraph 1:

-- Fig. 5 is a [plan] perspective view of the third sample vessels used for the electrophoresis analysis apparatus according to one embodiment of the present invention. --

The two paragraphs starting at line 20 and ending on page 19, line 3, have been replaced with the following amended paragraphs:

-- The sample plate 102" is fixed on the metal base 104 with screws. The metal base 104 is made [from] of a stainless steel as a conductive material. The metal base 104 forms part of wall surfaces of the sample vessels 100-11, ..., 100-4n, and is used as an electrode common to samples contained in the sample vessels 100-11, ..., 100-4n. Since the metal base forms part of the sample vessels, it is possible to eliminate the necessity of inserting electrodes in samples as in the conventional apparatus.

The sample tray 100" is fixed on a metal [made] sample tray holder with set screws. As described with reference to Fig. 3, a packing is inserted between the sample plate 102" and the metal base 104 for preventing leakage of samples in the sample vessels. A pitch P between the adjacent sample vessels is set at a value obtained by dividing a pitch (9 mm) between adjacent holes of the microtiter plate by an integer number. --

Page 19: The last full paragraph has been replaced with the following amended paragraph:

-- A sample tray 100A in this embodiment includes a sample plate 102E composed of a transparent plate made [from] of an acrylic resin, an insulating base 104B, a packing 106 made [from] of silicon rubber, and metal pins 108 made [from] of a conductive material such as a stainless steel. The sample plate 102E has a taper portion functioning as a sample vessel. That is to say, a sample is contained in the taper portion of the sample plate 102E. The metal pin 108 is brought in electric-contact with a sample and functions as an electrode. Since a plurality of the sample vessels are formed in the sample tray 100A, the metal pins 108 of the same number as that of the sample vessels are provided in such a manner as to be electrically connected to the metal [made] sample tray holder shown in Fig. 1. --

Page 20: The paragraph starting at line 22 has been replaced with the following amended paragraph:

-- A sample tray 100B in this embodiment includes a metal [made] sample plate 102F, an insulating base 104C, and a packing 106 made [from] of silicon rubber. The sample plate 102F is formed with a taper portion functioning as a sample vessel. That is to say, a sample

is contained in the taper portion of the sample plate 102F. Further, the sample plate 102F made [from] of a conductive material has a function as an electrode. --

Page 23: The paragraph starting at line 6 has been replaced with the following amended paragraph:

-- In this embodiment, metal ~~made~~ projections 104F1 and 104F2 are integrally formed on a base 104F made [from] of a metal such as a stainless steel. Insulating rings 103A and 103B are inserted around the projections 104F1 and 104F2, respectively, to form sample vessels. --

The paragraph starting at line 16 has been replaced with the following amended paragraph:

-- In the above description, part of the sample tray is made [from] of a conductive material; however, the entire sample tray may be made [from a] of metal. --

The paragraph starting at line 19 has been replaced with the following amended paragraph:

-- As described above, according to this embodiment, since part of the plurality of the sample vessels provided on a sample tray are made [from] of a conductive material and are taken as a common electrode, the necessity of inserting electrodes in the sample vessels as in the conventional apparatus can be eliminated. As a result, since only the capillaries may be inserted in the sample vessels, the preparation for analysis can be facilitated. --

Page 24: The paragraph starting at line 2 has been replaced with the following amended paragraph:

-- While the [preferred] specific embodiments have been described using specific terms, such description is for illustrative purposes only, and it is understood that many

changes and variations may be made without departing from the spirit or scope of the following claims. --